ENGINEERING REPORT

for

CONTRACT NUMBER DACW-33-83-D-0006
WORK ORDER NUMBER 0017

SUBSURFACE INVESTIGATION

PEASE AIR FORCE BASE
PORTSMOUTH, NEW HAMPSHIRE

July 25, 1984

Prepared for:

U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Massachusetts 02254

EGA

EGA
EASTERN GEOTECHNICAL ASSOCIATES • BRIGGS
164 Washington Street, Norwell, MA 02061 ▶ Telephone (617) 773-1744

July 25, 1984

U.S. ARMY CORPS OF ENGINEERS
New England Division
424 Trapelo Road
Waltham, Massachusetts 02254

ATTENTION: Jim Blair - 117 South

RE: Contract DACW-33-83-D-0006
Work Order No. 0017

Dear Mr. Blair:

In accordance with Work Order No. 0017, dated 13 July 1984, attached are two final copies of our Engineering Report for the subsurface investigation performed at Pease Air Force Base, Portsmouth, New Hampshire. The work was performed for the proposed addition to Building 43, AFOSI.

If you have any questions or comments, please do not hesitate to call.

Very truly yours,

David S. Campbell, P.E.
President

DSC/rb
Attachments

TABLE OF CONTENTS

1.0 GENERAL

1.1 Authorization

The work reported herein was performed under Contract DACW 33-83-D-0006, Work Order Number 0017, dated 13 July 1984.

1.2 Project Site

The site is located at Pease Air Force Base, Portsmouth, New Hampshire, Building 43, AFOSI.

1.3 Purpose

The purpose of this work was to determine the foundation conditions for the proposed building addition.

1.4 Scope of the Investigation

Inspection and exploration instructions, which were provided by the Army Corps of Engineers, New England Division, are included in Appendix A. The subsurface investigation program employed three test pits to a depth of 12 feet, with representative bag samples taken for each stratum.

Work under this delivery order consisted of locating three test pits by taping distances from the existing structure. The test pits were performed on flat level ground.

2.0 QUALITY CONTROL

2.1 Equipment

The following equipment was used to perform the work.

a. Backhoe: Case 580-D was provided by 7-24 Construction Co., P.O. Box 361, Greenland, New Hampshire 03840 and used to excavate three test pits.

2.2 Records

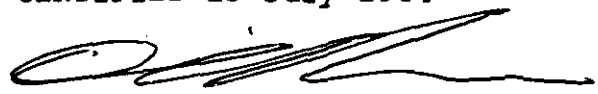
The test pit locations are shown on Figure 1. NED form 119, was used to record pertinent test pit and subsurface information. The test pit logs are included as Appendix D. Samples were classified in the field immediately following the taking of the sample. Classification was in accordance with ASTM D-2487 and D-2488. Representative soil samples weighing approximately 5 pounds were taken from each soil stratum and placed in plastic bags. Bags were secured with ties and labeled with test pit number, sample number, sampling interval, date, and soil description. A chain of custody log was maintained documenting custody of the samples between the field and delivery to the laboratory at NED.

Safety reports for this work order are included in Appendix B, including AF form 103, clearing the work area of underground utilities.

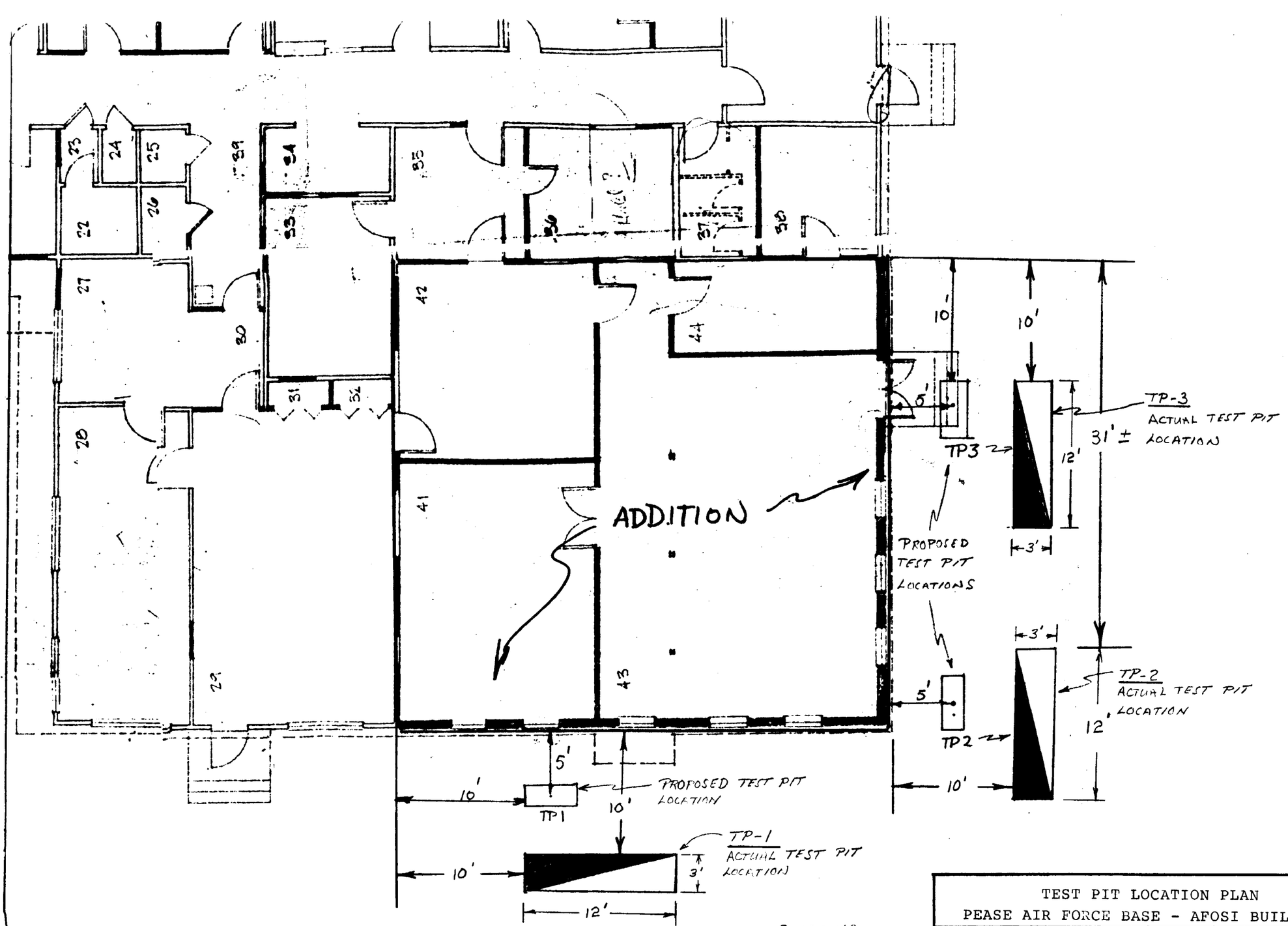
3.0 QUALITY CONTROL CERTIFICATION

I herby certify that the equipment, procedures and records referenced in this report were used to perform the subsurface exploration described herin. I also certify that the work was performmed in a professional manner and meets the requirements set forth in the work order.

CERTIFIED 25 July 1984



David S. Campbell



NOTES: PROPOSED TEST PIT LOCATIONS RELOCATED BECAUSE OF EXISTING CONCRETE SIDEWALK.

BASE PLAN PROVIDED BY NEW ENGLAND DIVISION ARMY CORPS OF ENGINEERS.

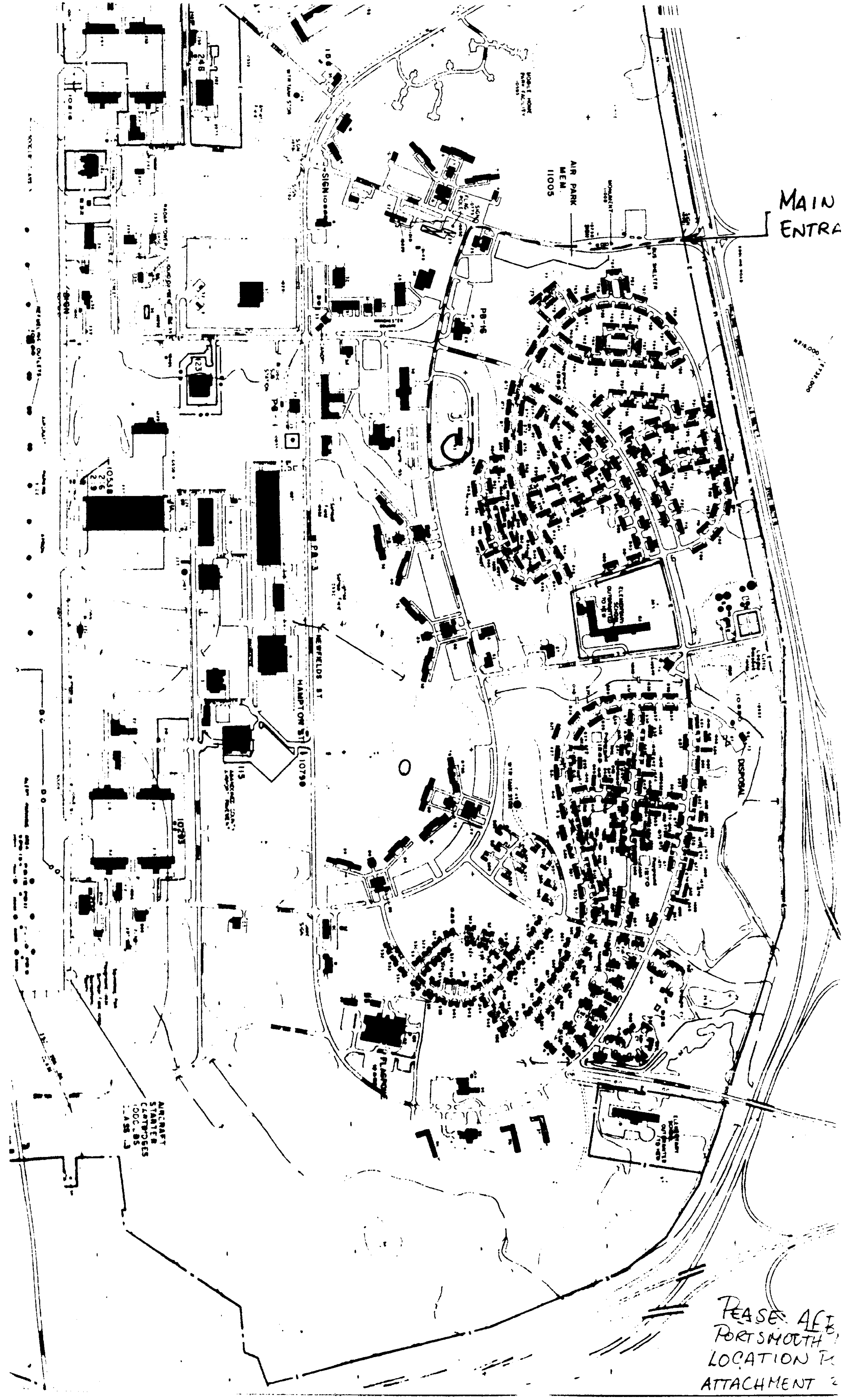
TEST PIT LOCATION PLAN
PEASE AIR FORCE BASE - AFOSI BUILDING 43

EGA
EASTERN GEOTECHNICAL ASSOCIATES • BRIDGE

DR. BY: R.F.B.	SCALE: 1/8"=1.0'	PROJ. NO. WO 17
CK'D BY: C.H.G.	DATE: 7-24-84	FIG. NO. 1

APPENDIX A

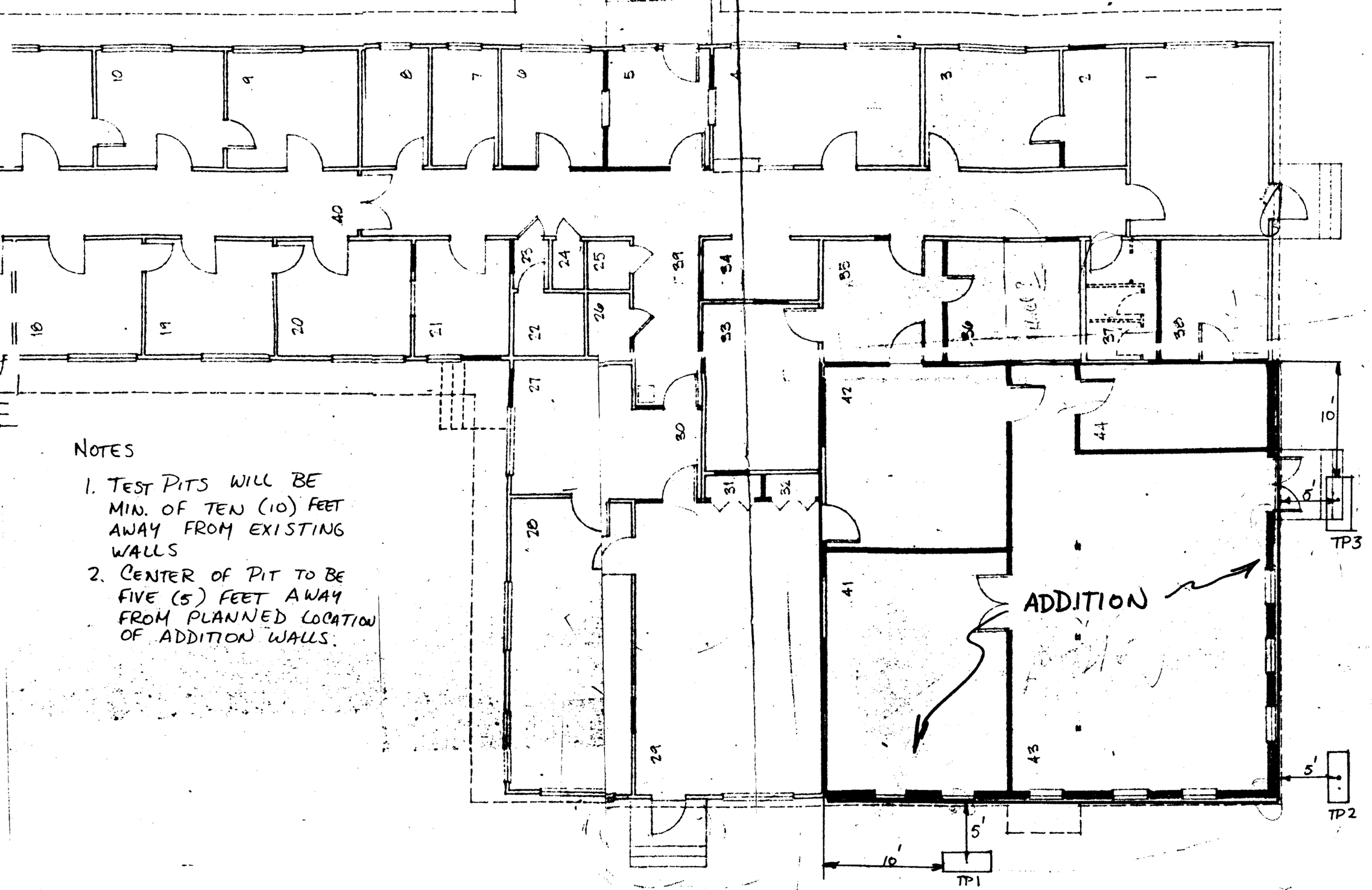
INSPECTION AND EXPLORATION INSTRUCTIONS



PEASE AFB,
PORTSMOUTH,
LOCATION P
ATTACHMENT 2

NOTES

1. TEST PITS WILL BE MIN. OF TEN (10) FEET AWAY FROM EXISTING WALLS
2. CENTER OF PIT TO BE FIVE (5) FEET AWAY FROM PLANNED LOCATION OF ADDITION WALLS.



B. PLAN OF ADDITION & ALTERATIONS TO BLDG 43 1/8"=1'0"

ATTACHMENT 3

ATTACHMENT NO. 1

GEB REQUISITION 84-74 - DACW 33-83-D-0006

DELIVERY ORDER NO. 0017

INSPECTION AND EXPLORATION INSTRUCTIONS

PROJECT: Building addition to AFOSI, Building 43

SITE: Pease Air Force Base, Portsmouth, NH

PURPOSE: The subsurface investigations are to determine the foundation conditions for the proposed building addition at Pease AFB, Portsmouth, NH

1. SCOPE OF INVESTIGATIONS

a. Excavate and backfill 3 or more test pits to a depth of 12 feet. Additional test pits may be added if needed to determine areal extend of bedrock surface. Finished pits will be compacted and seeded. Location of pits are shown in Attachment 3.

b. Test pits shall be logged and material shall be bag sampled from ground surface. Location of bedrock is to be noted.

c. A geologist shall act as field inspector while performing the excavations. The inspector shall provide a telephone report to Mr. Paul L'Heureux noting soil type and bedrock location upon completion of test pits.

d. All samples shall be delivered to the Corps of Engineers Headquarters in Waltham, MA by the field inspector. Sample delivery shall be coordinated with the Director, NED Materials & Water Quality Laboratory at 617-647-8367/ 8392.

2. SITE CONDITIONS

The proposed exploration program is on Pease Air Force Base, Portsmouth, NH. All of proposed test pits are on flat level ground owned by the Government.

3. RIGHTS OF ENTRY

The Contractor is responsible for securing any rights of entry, approvals, locating all utilities, etc. necessary for the performance of work coordinating work effort with Mr. Whittington, Pease Air Force Base, at 603-430-3621.

4. COORDINATION

Mr. Paul L'Heureux, Corps of Engineers, 617-647-8669, shall be contacted three days prior to start of work.

5. GOVERNMENT REVIEW

The Government will review the draft submittal as well as the completed work.

Subsequent to such review, the Contractor shall accomplish any corrections which may be directed as result of Government review.

6. COMPLETION SCHEDULE

Services under this delivery order shall be performed on or about 18 July 1984. Duration of the field work is one day. The geotechnical report shall be submitted in draft format for review by the Government, post-marked no later than seven calendar days after completion of the field work. Government review will take approximately ten calendar days from receipt of draft report. The final geotechnical report shall be submitted post-marked no later than seven calendar days after receipt of draft report including the action taken on any possible Government comments.

7. QUALITY CONTROL

You will be held responsible for the quality of the maps submitted and for all damages caused the Government as a result of your negligence in the performance of any services furnished under the contract.

Although submissions required by your contract are technically reviewed by the Government, it is emphasized that your work must be prosecuted using proper internal controls and review procedures. The letter of transmittal for each submission which you make shall include a certification that the submission has been subjected to your own review and coordination procedures to insure (a) completeness for each discipline commensurate with the level of effort required for that submission, (b) elimination of conflicts, errors and omissions, and (c) the overall professional and technical accuracy of the submission. Documents which are significantly deficient in any of these areas will be returned to you for correction and/or upgrading prior to our completing our review. Contract submission dates will not be extended if a resubmission of draft material is required for this reason.

APPENDIX B

SAFETY REPORTS

EASTERN GEOTECHNICAL ASSOCIATES

WEEKLY SAFETY MEETING

TO: Safety Office, NED

FROM: Field Engineer Date held 7-19-84

THRU: Project Engineer Time 1500

Weekly safety meeting was held this date for the following personnel:
Contract No. DACW 33-83-D-0006 Personnel present: John Crowther
Work Order No. 0017
Conducted By: Ronald F. Bukoski

1. Subjects discussed (Note, delete, or add):

X Individual Protective Equipment -
Prevention of Falls -
Safe Lifting Techniques -
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -
Staging, Ladders, Concrete Forms -
Hand Tools -
Portable Power Tools -
Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -
Ropes, Hooks, Chains and Slings -
Electrical Grounding, Temporary Wiring -
Lockouts for safe clearance procedures -
Electrical, pressure, moving parts -
Welding -
Excavations -
Loose Rock and Steep Slopes -
Explosives -
Water Safety -
X Other - Underground utilities and excavation stability

Prepared by: Ronald F. Bukoski
Field Engineer

2. Exposure:

No previous exposure, start of new work order.

Signature: Ronald F. Bukoski
Project Engineer

3. Forwarded: NED, Waltham, MA

EASTERN GEOTECHNICAL ASSOCIATES

WEEKLY SAFETY MEETING

TO: Safety Office, NED

FROM: Field Engineer Date held 7-23-84

THRU: Project Engineer Time _____

Weekly safety meeting was held this date for the following personnel:
Contract No. DACW 33-83-D-0006 Personnel present: _____
Work Order No. 0017 _____
Conducted By: _____ _____
_____
_____
_____

1. Subjects discussed (Note, delete, or add):

Individual Protective Equipment -
Prevention of Falls -
Safe Lifting Techniques -
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -
Staging, Ladders, Concrete Forms -
Hand Tools -
Portable Power Tools -
Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -
Ropes, Hooks, Chains and Slings -
Electrical Grounding, Temporary Wiring -
Lockouts for safe clearance procedures -
Electrical, pressure, moving parts -
Welding -
Excavations -
Loose Rock and Steep Slopes -
Explosives -
Water Safety -
Other -

Prepared by: _____
Field Engineer

2. Exposure:

For July 20, 1984, covering one person for a total exposure of 8 manhours. Field work was completed on July 20, 1984.

Signature: Paul F. Babb
Project Engineer

3. Forwarded: NED, Waltham, MA

~~#~~ 94771

BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST

DATE PREPARED: 18 JULY 84

1. Clearance is requested to proceed with work at AFOSI BLDG 43 on Work Order/Job No. ______, Contract No. PEA 83-0103, involving excavation or utility disturbance per attached sketch. The area involved ☐ Has ☒ Has not been staked or clearly marked.

2. TYPE OF FACILITY/WORK INVOLVED

A. PAVEMENTS	B. DRAINAGE SYSTEMS	C. RAILROAD TRACKS	D. FIRE DETECTION AND PROTECTION SYSTEMS	E. UTILITY ☐ OVERHEAD ☐ UNDERGROUND
F. COMM. ☐ OVERHEAD ☐ UNDERGROUND	G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW	H. SECURITY	I. OTHER (Specify) BUILDING ADDITION & EXCAVATION	

3. INSTRUCTIONS: The BCE work clearance request is used for any work (contract or in house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm system, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. *It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents.* The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance request must be reprocessed.

4. DATE CLEARANCE REQUIRED	5. DATE CLEARANCE TERMINATED
19 JULY 84	31 AUG 84

6. REQUESTING OFFICIAL (Signature)	7. PHONE NO.	8. ORGANIZATION
Earle L Whittington / D. Landry	X3621	509CSG/DEED

CLEARANCE REVIEW

ORGANIZATION		REMARKS	REVIEWER'S NAME AND INITIALS
9. BASE CIVIL ENGINEERING	A. ELECTRICAL DISTRIBUTION	NONE in area	M. Thurlow
	B. STEAM DISTRIBUTION	none in area	L. Manning
	C. WATER DISTRIBUTION	Not in Work Area	R. [illegible]
	D. POL DISTRIBUTION	none in area	L. Manning
	E. SEWER LINES	Not in Work Area	R. [illegible]
	F. DRAINAGE SYSTEMS	none in area	[illegible]
	G. PAVEMENTS, GROUNDS, RAILROADS	None in area	[illegible]
	H. FIRE DEPARTMENT N/A		
	I. ENGINEERING & ENVIRONMENTAL PLANNING	OK	[illegible] Baker, P.E.
	J. CATHODIC PROTECTION	N/A Angel Sousa	
	K. OTHER GAS	Not in Work Area	R. [illegible]
10. SECURITY POLICE N/A			
11. SAFETY N/A			
12. COMMUNICATIONS		No Comm Cables in Work Area	Glenn MacFarlane
13. BASE OPERATIONS			
14. COMMERCIAL UTILITY COMPANY (Telephone, Gas, Electrical, etc.)		NO TEL CABLES IN WORK AREA	Brett Merrill
15. OTHER (Specify)			

APPENDIX C

CHAIN OF CUSTODY LOG

CHAIN OF CUSTODY LOG

GEB REQUISITION 84-74 DACW 33-83-D-006
DELIVERY ORDER NO. 0017

PEASE AIR FORCE BASE Portsmith NH
Building addition to AFOSI Building 43

Description: Bag Soil samples

7 Bags @ 5 lbs ea ±

As Sampled Date:
John Crowther 7-20-84

Delivered	Date Time	Recieved	Date Time
John Crowther	7-23-84 1605 hrs	Paul Sparks	7/23/84 1600

To: NED Materials and Water Quality Lab
Trapelo Road Waltham MA

APPENDIX D

TEST PIT LOGS

CORPS OF ENGINEERS
NEW ENGLAND DIVISION
FOUNDATIONS & MATERIAL BRANCH

FIELD LOG OF FOUNDATION AND BORROW INVESTIGATION

SITE Pease AFB Bld. #43 TYPE EXPLORATION Test Pit DATE 7-20-84
EXPLORATION NO. TP-1 CO-ORD. N _____ E _____ GROUND ELEV. _____
PURPOSE OF EXPLORATION Foundation Investigation for proposed addition to Building 43

DEPTH 1"=3.0'	SAMPLE'S No.	SAMPLE'S Depth	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	REMARKS AND FIELD TEST DATA
	1	0.75'		TOP and SUBSOIL # see Note 1	grass at surface
1.0 – 12.0	2	12.0'		SILTY SAND coarse to fine, mostly fine, 10-20% subrounded cobbles and gravel, 10-15% non plastic fines, greenish grey brown, (SM). [GLACIAL TILL]	Very Dense 0.75 to 12.0 feet. Moist at 11.0 to 12.0 feet
				Note 1: silty sand, coarse to fine, mostly fine, 10-15% gravel + cobbles, 10-15% nip. fines, grass roots, brown (SM)	

DIMENSIONS OF TEST PIT 3 X 12 X 12 deep VOL. REPRESENTED 300 ± CU. FT. (Bottom length 5 ft. ±)

COBBLES & BOULDERS:
4"-6" Diam. No. 60 ± Vol. 7.5 ± Cu. Ft.
6"-18" Diam. No. 10-15 ± Vol. 10-15 ± Cu. Ft.
Over 18" No. — Vol. — Cu. Ft.

WATER TABLE DEPTH NOT ENCOUNTERED

Remarks: MATERIALS CONSISTENT FOR ALL TEST PITS #1, #2 & #3

Submitted by John Crowther

NED FORM DEC 63 119 REPLACES EDITION OF AUG 47 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION
FOUNDATIONS & MATERIAL BRANCH

FIELD LOG OF FOUNDATION AND BORROW INVESTIGATION

SITE Pease AFB Bld #43 TYPE EXPLORATION Test Pit DATE 7-20-84
EXPLORATION NO. TP-2 CO-ORD. N _____ E _____ GROUND ELEV. _____
PURPOSE OF EXPLORATION Foundation Investigation for proposed addition to Building 43

DEPTH 1" = 3.0'	SAMPLE'S No.	SAMPLE'S Depth	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	REMARKS AND FIELD TEST DATA
	1	0.75'		TOP + SUBSOIL see Note 1	grass at surface
1.0					
2.0				SILTY SAND coarse to fine, mostly fine, 10-20% subrounded cobbles and gravel, 10-15% non plastic fines, greenish, grey brown, (SM).	
3.0	2				Very Dense 0.75 to 12.0 feet
4.0					
5.0					Boulder at 4.0 ft.
6.0					
7.0				[GLACIAL TILL]	
8.0					
9.0					
10.0					
11.0					Moist at 11.0 to 12.0 feet
12.0		12.0'			
				NOTE 1: silty sand, coarse to fine, mostly fine, 10-15% gravel & cobbles, 10-15% n.p. fines, grass roots, brown (SM)	

DIMENSIONS OF TEST PIT 3 x 12 x 12 deep VOL. REPRESENTED 300 ± CU. FT.
(Bottom length 5 ft. ±)

COBBLES & BOULDERS:
4"-6" Diam. No. 60 ± Vol. 7.5 ± Cu. Ft
6"-18" Diam. No. 15-20 ± Vol. 15-20 ± Cu. Ft
Over 18" No. 1 Vol. 36 ± Cu. Ft.

WATER TABLE DEPTH NOT ENCOUNTERED

Remarks: MATERIALS CONSISTENT FOR ALL TEST PITS #1, #2 & #3

Submitted by John Crawford

NED FORM DEC 63 119 REPLACES EDITION OF AUG 47 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION
FOUNDATIONS & MATERIAL BRANCH

FIELD LOG OF FOUNDATION AND BORROW INVESTIGATION

SITE Pease AFB Bld. #43 TYPE EXPLORATION Test Pit DATE 7-20-84
EXPLORATION NO. TP-3 CO-ORD. N _____ E _____ GROUND ELEV. _____
PURPOSE OF EXPLORATION Foundation Investigation for proposed addition to Building 43

DEPTH 1" = 3.0'	SAMPLE'S No.	SAMPLE'S Depth	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION	REMARKS AND FIELD TEST DATA
	1	0.5'		TOPSOIL loamy silty sand	grass at surface
1.0	2	1.5'		SUBSOIL see Note 1	
2.0					
3.0				SILTY SAND coarse to fine, mostly fine, 10-20% subrounded cobbles and gravel, 10-15% non plastic fines, greenish grey brown, (SM).	Very Dense 1.5 to 12.0 feet
4.0	3				
5.0					
6.0					
7.0					
8.0				[GLACIAL TILL]	
9.0					
10.0					
11.0					Moist at 11.0 to 12.0 feet
12.0		12.0'			
				Note 1: silty sand, coarse to fine, mostly fine, 10-15% gravel and cobbles, 5-15% n.p. fines, brown (SM)	

DIMENSIONS OF TEST PIT 3 x 12 x 12 deep VOL. REPRESENTED 300 ± CU. FT.
(Bottom length 5 ft. ±)

COBBLES & BOULDERS:
4"-6" Diam. No. 60 ± Vol. 7.5 ± Cu. Ft.
6"-12" Diam. No. 10-15 ± Vol. 10-15 ± Cu. Ft.
Over 12" No. — Vol. — Cu. Ft.

WATER TABLE DEPTH NOT ENCOUNTERED

Remarks: MATERIALS CONSISTENT FOR ALL TEST PITS #1, #2 & #3

Submitted by John Cronthon

NED FORM DEC 63 119 REPLACES EDITION OF AUG 47 WHICH MAY BE USED UNTIL EXHAUSTED